

Atty. D.t. No.: P66717US0  
Serial No.: 09/857,182

*C3*

17. A microporous heat insulation body consisting of a core of a compressed heat insulation material containing from 30 to 90% by weight of a finely divided metal oxide and further additives, wherein one or both surfaces thereof have a cover of a heat-resistant material, characterized in that the covers are the same or different and at least one side consists of prefabricated mica sheets and the microporous heat insulation body is stable at 620°C.

REMARKS

Claim 8-17 are pending in the application.

Claim 17, added hereby, contains the subject matter of claim 8 revised such that "the microporous heat insulation body is stable at 620°C," as described in the table on page 7 of the instant specification. The requisite marked up version of amended claim 11 is attached, hereto.

The specification is amended, hereby, to add the section "Brief Description of the Drawings."

In connection with the objection to the specification, PTO rules do not require the use of subject headings.

Claim 11 stands rejected under 35 USC 112, ¶2, for allegedly being indefinite. Reconsideration is requested in view of the amendment to claim 11 effected, hereby.

Claims 8-10 and 13-16 stand rejected under 35 USC 103(a) for alleged obviousness based on the combined teachings of U.S. Patent No. 5,556,689 (Kratel) and U.S. Patent No. 4,783,365 (Sklarski). Reconsideration of the rejection is requested.

As to the rejection of claims 8-10 and 11-13 under §103(a), the statement of rejection alleges that Kratel fully meets the rejected claims, except for (1) the "cover of a heat-resistant material," one or both sides of which "consists of prefabricated mica sheets, (2) the core "thickness of from 5 to 7 mm," (3) the cover "adhered to the core," and (4) the core and cover "heat-sealed within a sheet." According to the statement of rejection, it would have been obvious to modify Kratel to contain the missing "cover of a heat-resistant material" (with "prefabricated mica sheets") based on the teachings of Sklarski. As to the core "thickness of up from 5 to 7 mm," it is an allegedly obvious optimization of the 10-15 mm core thickness disclosed in Kratel. According to the statement of rejection, it would

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have been obvious to optimize "the thickness of the core depending upon the end use of each product" (Office Action, page 4). The cover "adhered to the core" and the core/cover "heat-sealed within a sheet" are discounted, i.e., not taken into account in comparing the claims with the prior art, by the statement of rejection as alleged *product-by-process limitations*.

Concerning the rejection of claims 11 and 12 under §103(a), the statement of rejection alleges that Kratel, as allegedly modified by Sklarski, suggests the rejected claims except for the limitations to the core containing "2 to 25 % by weight of xonotlite" (in claim 11) and "5 to 15 % by weight of xonotlite" (in claim 12). According to the statement of rejection, it would have been obvious to modify Kratel/Sklarski to include the "xonotlite" weight limitations in the rejected claims based on the teachings of Takahashi.

The rejections of claims 8-10 and 13-16 under §103(a) and claims 11 and 12 under §103(a) are poorly taken and cannot be maintained.

As to the rejection of claims 8-10 and 13-16 under §103(a), Kratel discloses a microporous heat insulating board. As acknowledged by the statements of rejection, the reference fails to disclose that at least one side of the core has a cover consisting of prefabricated mica sheets.

Sklarski teaches a mica-insulating structure. More specifically, the reference structure is directed to a mica sheet comprising 5 to 25% by weight of an organic substance (Sklarski column 1, lines 47-54). Such laminates are totally unsuitable for use in the presently claimed invention.

According to Sklarski the laminates find use in high temperature environments. These "high temperature environments" are in the range of 180 °C (Sklarski column 2, lines 24-26). The presently claimed invention is directed to applications in the temperature range of 1000 °C, for example, as shown in the experimental data recorded in Example 1 of the specification and graphically represented in application Figure 2.

The mica sheet comprising high amounts of organic compounds disclosed in Sklarski is unsuitable for the applications to which the presently claimed invention is directed. Starting from Kratel, a person skilled in the art would not have arrived at the presently claimed invention by applying the teachings of Sklarski. As explained in the present specification (page 3, paragraph 5),

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the heat insulation plates should not contain organic or combustible components. This would destabilize the product upon heating and could also release toxic gases. The mica sheet described in Sklarski might be useful as an electrical insulator. However, the reference neither teaches nor suggests suitability of its mica sheet for increasing or improving the properties of a heat insulating material, as presently claimed.

Furthermore, applicants submit that the rejection cannot be maintained, independently of the aforesaid reasons, as applied against claim 14 (core "thickness of from 5 to 7 mm"), claim 15 ("cover is adhered to the core"), and claim 16 ("the core and the cover are heat-sealed within a sheet").

As to the core “thickness of up from 5 to 7 mm” in claim 14, the statement of rejection provides no prior art motivation for changing the Kratel core thickness to meet the thickness limitation of the claim. Instead, the rejection argues that the limitation is an allegedly obvious *optimization* of the 10-15 mm core thickness disclosed in Kratel. That is, according to the statement of rejection, it would have been obvious to *optimize* “the thickness of the core depending upon the end use of each product” (Office Action, page 4) to arrive at the claim 14 limitation to a core thickness of 5 to 7 mm.

The rejection of claim 14 is improper on its face and, so, it cannot be maintained. When obviousness of a claim limitation is grounded on its allegedly being "old and well known in the art . . . as a means of optimization which is highly desirable," the "ground of rejection is simply inadequate on its face . . . because the cited references do not support each limitation of [the] claim." *In re Thrift*, 63 USPQ2d 2002, 2008 (Fed. Cir. 2002).

The limitation to a cover “adhered to the core” (claim 15) and the limitation to the core and cover being “sealed within a sheet” (claim 16) are not taken into account in comparing the claims with the prior art because, according to the statement of rejection, the claims at issue are allegedly *product-by-process* claims, in which the limitations are entitled to no weight in a §103(a) analysis.

First of all, claims 15 and 16 are not product-by-process claims, allegations in the statement of rejection to the contrary notwithstanding. The cover being "adhered to the core" and the core with cover being "sealed within a sheet" are *structural* limitations on the claimed "microporous heat

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insulation body." Merely because the claim limitations contain the words "adhered" and "sealed" does not mean they are defining the claimed product in terms of how the product is made.

The word "adhered" conveys that the cover and the core form a unitary structure, i.e., according to *Merriam-Webster OnLine: Collegiate Dictionary*, 2002, (having URL <http://www.merriam-webster.com/dictionary.htm>) *adhered*, with reference to "adhere," is defined, *inter alia*, as "to hold fast or stick by or as if by gluing, suction, grasping, or fusing joined together."

The word "sealed" conveys that the structure of the claimed product includes a *seal*, i.e., according to the *Merriam-Webster OnLine: Collegiate Dictionary*, 2002, *sealed*, with reference to "seal," is defined, *inter alia*, as

something that secures (as a wax seal on a document) b: a closure that must be broken to be opened and that thus reveals tampering c(1): a tight and perfect closure (as against the passage of gas or water) (2) : a device to prevent the passage or return of gas or air into a pipe or container.

Accordingly, the rejection fails against claims 15 and 16 because it fails to account for *all* claim limitations. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). A "ground of rejection is simply inadequate on its face . . . [when] the cited references do not support each limitation of [the] claim." *In re Thrift*, 63 USPQ2d 2002, 2008 (Fed. Cir. 2002). When conducting an obviousness analysis, "all limitations of a claim must be considered in determining the claimed subject matter as is referred to in 35 U.S.C. 103 and it is error to ignore specific limitations distinguishing over the [prior art] reference." *Ex parte Murphy*, 217 USPQ 479, 481 (PO Bd. App. 1982).

Claims 11 and 12 stand rejected for alleged obviousness under 35 USC 03(a) based on the combined teachings of Kratel, Sklarski, and U.S. Patent No. 4,647,449 (Takahashi). Reconsideration of the rejection is requested.

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The rejection of claims 11 and 12 under §103(a) falls for the same reasons as explained, above, with respect to the rejection of claims 8-10 and 13-16. That is, claims 11 and 12 are dependent on claim 8. Since Takahashi adds nothing to cure the fatal deficiencies in Sklarski and Kratel as applied against claim 8, as explained above, the rejection of the claims 11 and 12 cannot be maintained.

Takahashi discloses the use of a mixture of calcium silicate crystals together with inorganic inactive substances. According to column 12, lines 6-30, of the reference, the mixture is pressed for de-watering and shaping and, then, dried at 100 °C, which means that the mixture is prepared in an aqueous medium. Combining finely divided metal oxide, for example, pyrogenic silicas, as disclosed in Kratel (claims 1 and 5), together with an aqueous slurry of xonotlite results in an unstable product, i.e., a product having cracks and the like.

The rejections of record under §103(a) are not applicable against present claim 17 for the same reasons set forth, above, with respect to the rejection of claim 8.

Moreover, the rejections of record under §103(a) are not applicable against present claim 17 because the claim is limited, further, to the microporous heat insulation body "stable at 620 °C (as disclosed in the table on page 7 of the specification). That is, neither cited reference, taken alone or in combination with one another, teaches or suggests a microporous heat insulation body that is "stable at 620 °C."

The rejection for obviousness-type double patenting is "provisional," i.e., the allegedly conflicting claims have neither been patented nor allowed. The rejection is premature, to the extent that there is as yet no indication that any of the allegedly conflicting claims will be allowed, let alone patented. That is, unless and until such time that there is, in fact, an indication of allowability with respect to conflicting claims, allegedly or otherwise, Applicants need take no action with respect to the rejection. For example, claims in the respective applications might be amended such that the Examiner, theoretically, would find that no conflicting claims remain and, therefore, withdraw the rejection. Accordingly, Applicants request that the rejection be held in abeyance unless and until

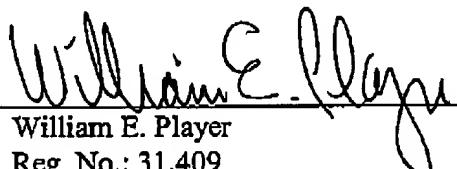
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such time as the Examiner finds a conflict between patented claims in the other application, on the one hand, and otherwise allowable claims in the instant application, on the other.

Favorable action is requested.

Respectfully submitted,

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*Marked up version of amendment*

Rewrite the following claim.

11 (amended). The microporous heat insulation body according to claim 8, characterized in that  
the core contains from 2 to 45 % by weight of xonotlite.